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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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James F. Munro

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EXAMINER

RATCLIFFE, LUKE D

ART UNIT

PAPER NUMBER

3662

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/722,889	Applicant(s) MUNRO, JAMES F.	
	Examiner Luke D. Ratcliffe	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 197-284 (excluding all previously nonelected claims and their dependants) is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 197-214, 217-244, 247-284 (excluding all nonelected claims and their dependents) is/are rejected.
- 7) ☐ Claim(s) 215 and 245 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 1-196 (excluding all previously non elected claims) are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/7/05.

Applicant's election with traverse of invention with respect to claim 197-284 in the reply filed on 12/7/05 is acknowledged. The traversal is on the ground(s) that there is no burden of search on the examiner because the inventions are in a required field of search. This is not found persuasive because a burden of search is only applicable to a species election and claims 1-196 (excluding all previously non elected claims) were drawn to a method for measuring a parameter of a target that included a specific type of signal processing which would require the examiner to search each different type of signal processing.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 212 and 281 are objected to because of the following informalities: a period at the end of the claim is missing. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 197, 198, 201, 227, 228, and 231 are rejected under 35 U.S.C. 102(b) as being anticipated by Dornbusch (5294970).

Referring to claims 197 and 227, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal.

Referring to claims 198 and 228, Dornbusch shows a measured parameter that is distance (column 1 line 60 to column 2 line 5).

Referring to claims 201 and 231, Dronbusch shows the generation of a signal for transmitting (figure 4).

Claims 279-283 are rejected under 35 U.S.C. 102(b) as being anticipated by Wachter (5889490).

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Referring to claim 279, Wachter shows a transmission of a coherent burst (column 5 line 1-8), a receiving portion (figure 3), a sampling of at least one portion of the received signal (column 1-3), and determining the distance based on the phase difference between the received and transmitted signal (column 1-5).

Referring to claim 280, its inherent that a signal is generated for the system to work.

Referring to claim 281, Wachter shows the amplification and filtering of a signal received from a target (figure 4 Ref 82).

Referring to claim 282, Wachter shows sampling comprising sampling multiple portions of the received signal and determining further comprises determining the distance based on an average of the phase differences between the transmitted signal and the sampled portions of the received signal column 4-5).

Referring to claim 283, Wachter shows a system that comprises equivalent time sampling of the received signal (column 4 and 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 202, 232, and 253 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970).

Referring to claims 202, 232, and 253, it would be obvious to use a filter to obtain the desired signal for transmission because this is a well-known and common means to obtain a specific signal, this method has no new or unexpected results.

Claims 203, 223, and 232 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Ohtomo (6450267).

Referring to claims 203, 223, and 232, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show a method comprising encoding data on the signal for transmitting.

Ohtomo shows a method for filtering a signal and encoding data on that signal (figure 3 Ref 32). It would have been obvious to encode data on a signal for transmission for recognition of the signal at the receiver.

Claims 207-209 and 237-239, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Wachter (5889490).

Referring to claims 207 and 237, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured

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parameter based on the amplitude of the signal. However Dornbusch does not show a signal that is a coherent burst modulation waveform.

Wachter shows a method for measuring a parameter of an object that includes a coherent burst modulation waveform (column 18). It would have been obvious to modify Dornbusch to use the coherent burst waveform taught by Wachter because this is a common signal used and adds no new or unexpected results.

Referring to claims 208 and 238, it would be obvious to use a waveform that has a power of less than 5mW and adds no new or unexpected results.

Referring to claims 209 and 239, it would be obvious to use a waveform that has an average power that is less than 1mW and adds no new or unexpected results.

Claims 212 and 242 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Nakazawa (5751406).

Referring to claims 212 and 242, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show amplifying and filtering the received portion of the transmitted signal back from the target.

Nakazawa shows a method for measuring a parameter of an object that includes amplifying and filtering the received portion of the transmitted signal back from the target (figure 6). It would have been obvious to modify Dornbusch to include the

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amplifier and filter taught by Nakazawa because this allows the signal to be of a readable magnitude and noise free.

Claims 213, 214, 243, 244, 269, 271, 273, 274, 275, 276, 277, and 228 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Yamaguchi (5767409).

Referring to claims 213, 243, 269, 271, 273, 276, and 277 Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show sampling of multiple portions of the received signal and the determining further comprises determining the measured parameter based on an average of the phase difference between the transmitted signal and the sampled portions of the received signal.

Yamaguchi shows a method for measuring a parameter of an object that includes sampling of multiple portions of the received signal and the determining further comprises determining the measured parameter based on an average of the phase difference between the transmitted signal and the sampled portions of the received signal (column 1 and 2). It would have been obvious to include the sampling and average phase measurement process taught by Yamaguchi because this is a common way to measure distance from an object and adds no new or unexpected results.

Referring to claims 214 and 244, it would be obvious to sample at least twenty samples of a received signal to obtain a complete sampling of the signal and adds no new or unexpected results.

Referring to claim 274, Dronbusch shows the generation of a signal for transmitting (figure 4).

Referring to claim 275, it would be obvious to use a filter to obtain the desired signal for transmission because this is a well-known and common means to obtain a specific signal, this method has no new or unexpected results.

Referring to claim 278, it is obvious to use Fourier transform to determine the phase difference between the transmitted and received signal because this is a common method to do so and adds no new or unexpected results.

Claims 217 and 247 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Cahill (6288776).

Referring to claims 217 and 247, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show determining a phase offset from a baseline wherein the measured parameter is based on the phase offset and the phase difference.

Cahill shows a method for measuring a parameter of a target including determining a phase offset from a baseline wherein the measured parameter is based on the phase offset and the phase difference (column 2). It would have been obvious to use the method of determining a baseline and the distance from the baseline as taught by Cahill because this is a common means of determining distance and adds no new or unexpected results.

Claims 219 and 249 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Wangler (5870180)

Referring to claims 219 and 249, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show using a look-up table to correct for one or more errors in the measured parameter.

Wangler shows a method for measuring a parameter of a target including using a look-up table to correct for one or more errors in the measured parameter (column 11 and 12). It would have been obvious to modify Dornbusch to use the look-up table as taught by Wangler because this is a common means to resolve errors with a signal and adds no new or unexpected results.

Claims 220, 221, 250, and 251 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Babbitt (5589928).

Referring to claim 220, 221, 250, and 251, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show determining a refractive index of a medium in which the transmitted signal propagates wherein the measured parameter is based on the refractive index of the medium and the phase difference.

Babbitt shows a method for measuring a parameter of a target that show determining a refractive index of a medium in which the transmitted signal propagates wherein the measured parameter is based on the refractive index of the medium and the phase difference and temperature and pressure readings (column 6 lines 25-60).

Claims 224 and 254 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dornbusch (5294970) in view of Schaffer (5612883).

Referring to claims 224 and 254, Dornbusch shows a method for measuring a parameter of a target including transmitting at least one signal towards a target (figure 4), receiving at least one of a return signal sent in response or the reflected signal (figure 4 and 5), equivalent time sampling of at least one portion of the signal (inherent with any computer system that samples a signal), and determining a measured parameter based on the amplitude of the signal. However Dornbusch does not show a comparing the measured distance against a threshold distance and providing a collision

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alert when the comparing indicates the measured distance is less than the threshold distance.

Schaffer shows a method for measuring a parameter of a target including a comparing the measured distance against a threshold distance and providing a collision alert when the comparing indicates the measured distance is less than the threshold distance (column 30-58). It would have been obvious to modify Dornbusch to include the threshold and alert taught by Schaffer because this is a common way to make a distance alert for a vehicle and adds no new or unexpected results.

Claim 284 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wachter (5889490).

Referring to claim 284, it would be obvious to use a discrete Fourier transform to determine the phase difference between the transmitted and received signals because this is a common method to do so and adds no new or unexpected results.

Allowable Subject Matter

Claims 215 and 245 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke D. Ratcliffe whose telephone number is 571-272-3110. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LDR

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